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## **Eddy-induced Growth of Low-frequency Flow of Atmospheric Circulation**

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### **Abstract**

**Amidst the stormy atmospheric circulation in the mid-latitudes, recurrent climatic modes dominate the variability beyond month-to-seasonal timescales. The fundamental internal dynamics for climatic modes to emerge amidst the transient weather storms remain elusive. We show robust evidences that planetary flow anomalies of the climatic modes gain self-reinforcements by systematically deforming the synoptic cyclones and anticyclones, month-to-seasonal time-mean anomalies in the weather-storm induced vorticity- and energy- fluxes are all directed preferentially towards the left the anomalous planetary flows in the northern hemisphere. Referred as a left-hand rule, this underlying relation between anomalies in climatic flow and weather-storm activity reveals the essential internal dynamic eddy-induced growth mechanism for climatic modes and climate flow variability.**